

KBR:kbr 10/7/05 437229.doc 164252.1
PATENT

Attorney Reference Number 3382-61340-01
Application Number 10/017,694

Claims

1. - 9. (canceled)

10. (currently amended) In a spectral audio encoder, a computer-implemented method comprising:

performing a frequency transform on plural time domain audio samples to produce a block of frequency coefficients; and

compressing the block of frequency coefficients; wherein the compressing includes,

quantizing the block of frequency coefficients;

computing a quality measure based upon the quantized block of frequency coefficients;

entropy encoding the quantized block of frequency coefficients;

computing a bit-count measure based upon the entropy encoded block of frequency coefficients;

comparing [[a]] the quality measure for the block to a quality target; and

comparing [[a]] the bit-count measure for the block to a minimum-bits target and to a maximum-bits target.

11. (canceled)

12. (original) The method of claim 10 wherein a first quantization loop includes the quantizing and the comparing the quality measure, and wherein a second quantization loop de-linked from the first quantization loop includes the comparing the bit-count measure.

13. (original) The method of claim 10 wherein the quality target, the minimum-bits target, and the maximum-bits target are for the block.

14. (currently amended) A computer-readable medium encoded with computer-executable instructions for causing a computer programmed thereby to perform a method of controlling quality and bitrate in [[an]] a spectral audio encoder, the method comprising:

performing a frequency transform on plural time domain audio samples, producing a block of

Page 2 of 6

KBR:kbr 10/7/05 437229.doc .164252.1
PATENT

Attorney Reference Number 3382-61340-01
Application Number 10/017,694

frequency coefficients;

determining one or more target quality parameters, a first target quality parameter of the one or more target quality parameters indicating an acceptable audio quality;

determining plural target bitrate parameters, a first target bitrate parameter of the plural target bitrate parameters indicating a minimum acceptable number of bits produced, and a second target bitrate parameter of the plural target bitrate parameters indicating a maximum acceptable number of bits produced; and

compressing audio information, wherein the audio information is the block of frequency coefficients, wherein quantization of the audio information is based at least in part upon the first target quality parameter, the first target bitrate parameter, and the second target bitrate parameter, and wherein the compressing includes:

quantizing the audio information;

computing a quality measure based upon the quantized audio information;

comparing the quality measure to the first target quality parameter;

entropy encoding the quantized audio information;

computing a bit-count measure based upon the entropy encoded audio information; and

comparing the bit-count measure to the first and second target bitrate parameters.

- 15. (canceled)

16. (currently amended) The computer-readable medium of claim [[15]] 14 wherein the first target quality parameter, the first target bitrate parameter, and the second target bitrate parameter are for the block.

17. (canceled)

18. (canceled)

19. (original) The computer-readable medium of claim 14 wherein the compressing includes: in a first quantization loop, adjusting the quantization until satisfaction of the first target quality

KBR:kbr 10/7/05 437229.doc 164252.1
PATENT

Attorney Reference Number 3382-61340-01
Application Number 10/017,694

parameter; and

in a second quantization loop, adjusting the quantization until satisfaction of the first and second target bitrate parameters.

20. (original) The computer-readable medium of claim 14 wherein the first target bitrate parameter is a function of factors comprising an average bit count estimate, buffer fullness, and buffer sweet spot.

21. (original) The computer-readable medium of claim 14 wherein the second target bitrate parameter is a function of factors comprising an average bit count estimate, buffer fullness, and buffer sweet spot.

22. (original) The computer-readable medium of claim 14 wherein the first target quality parameter is a function of factors comprising a complexity estimate and goal bit count.

23. (original) The computer-readable medium of claim 22 wherein the complexity estimate is a composite of a past complexity estimate and a future complexity estimate.

- 24. (original) The computer-readable medium of claim 22 wherein the complexity estimate is based at least in part upon a complexity estimate reliability measure.

25. (currently amended) The computer-readable medium of claim 22 ~~wherein the audio information is a block of frequency coefficients, and~~ wherein the goal bit count is based at least in part upon size of the block and maximum block size.

26.-100. (canceled)

101. (new) In a spectral audio encoder, a computer-implemented method comprising:
performing a frequency transform on plural time domain audio samples to produce a block of frequency coefficients; and

KBR:kbr 10/7/05 437229.doc t64252.1
PATENT

Attorney Reference Number 3382-61340-01
Application Number 10/017,694

compressing the block of frequency coefficients, wherein the compressing includes,
 quantizing the block of frequency coefficients;
 comparing a quality measure for the block to a quality target; and
 comparing a bit-count measure for the block to a minimum-bits target and to a
maximum-bits target;

 wherein a first quantization loop includes the quantizing and the comparing the quality
measure, and wherein a second quantization loop de-linked from the first quantization loop includes
the comparing the bit-count measure.

102. (new) The method of claim 101 wherein the quality target, the minimum-bits target, and
the maximum-bits target are for the block.